



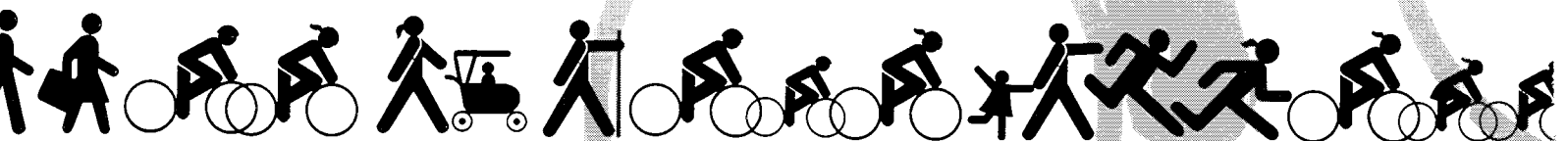
**Case
Study
No. 18
Final Report**

***Analyses of
Successful
Provincial,
State, and
Local Bicycle
and
Pedestrian
Programs in
Canada and
the
United States***



U.S. Department
of Transportation
**Federal Highway
Administration**

**National Bicycling
And Walking Study**



Foreword

This case study was prepared under contract for the Federal Highway Administration by the Bicycle Federation of America.

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FHWA Case Study No. 18
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Programs in Canada and the
United States**

Submitted to:

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Executive Summary

Introduction

A number of cities, provinces, and States in the United States and Canada have active bicycle and pedestrian programs—programs to promote the increased and safe use of bicycles and walking as modes of transportation through education, engineering, enforcement, and encouragement.

What Constitutes a Successful Bicycle or Pedestrian Program?

The report reviews various potential indicators of success demonstrated by different programs to determine how very different bicycle and pedestrian programs can be compared and used as an example or model for other communities.

- Increased bicycling/walking (Eugene, Oregon);
- Accident reductions (San Diego, California; Eugene, Oregon; Florida);
- Development of a user-friendly infrastructure (Calgary, Alberta; Seattle, Washington; Oregon);
- Significant expenditures (Florida; Minnesota; Oregon; Los Angeles, San Diego, California);
- Staff levels (North Carolina; Seattle, Washington; Florida);
- Education and public information outreach (Pennsylvania; Los Angeles, California; Milwaukee, Wisconsin);
- Events (Toronto, Ontario; Montreal, Quebec; Boulder, Colorado; Orlando, Florida);
- Integration into routine Government operations (California; New Jersey; Eugene, Oregon; Florida; Ontario);
- Publications/maps (North Carolina); and

- Development of practical planning documents (Vancouver, B.C.; Toronto, Ontario; Minnesota; San Jose, California).

Review of Successful Programs

Many of the communities listed as examples in the above section combine a number of the different indicators of success. In this section a more detailed examination of specific bicycle and pedestrian programs is undertaken, focusing on both provincial, State, and local government agencies, and citizens groups.

In addition to providing details of the programs in relation to the indicators of success, information has been provided, where possible, on program costs and benefits, and the formation and history of the program.

At the provincial and State level, detailed reviews are provided for successful programs in:

Florida: A 13-year-old bicycle program has generated a multimillion dollar improvement in the highway system, a revision of State highway laws, a bicycle facility design manual, model planning and program manuals, an active bicycle program in every metropolitan area (a total of more than 30 local coordinators), education programs, and training materials.

In recent years, pedestrian activities have been added to the responsibilities of the program. Many of the same improvements are now being generated for pedestrians.

North Carolina: Started in 1973, the North Carolina bicycle program has run the full gamut of potential program activities from educational programs (Basics of Bicycling, Streetwise Cycling) and promotional events (calendar of events, organizers manuals) to engineering projects, maps, and bicycle route designations. A full-time staff of seven constitutes the largest State program in the nation measured by staff levels.

The North Carolina program is notable for having longevity, ongoing success, gradual acceptance by other transportation professionals in the State, and for having utilized a wide variety of funding sources and other innovative means of getting things done.

Oregon: Through a unique financing mechanism, Oregon has developed a number of the best cities for bicycling in the country (Eugene, Portland, Corvallis). The State program, with three full-time staff, has been able to facilitate change at the local level, and also to greatly improve the State highway system for bicyclists.

Particular attention has been paid to routes such as the Pacific Coast Highway, where conditions for bicyclists have been dramatically improved through a variety of innovative engineering, operational, and informational techniques.

Minnesota: Minnesota has an excellent comprehensive State bicycle plan, "Plan B: Letting Bicycling work for Minnesota," and spends more than most others (\$4.3 million annually) on promoting bicycling. The program is also notable for educational materials aimed at motorists and bicyclists.

At the city and county level an increasing number of jurisdictions are involved in the promotion of bicycle and pedestrian facilities and safety programs. Special attention is given to:

Seattle, Washington: The city has a strong bicycle program, backed with citizen action, that has developed over more than a decade, and a newer, innovative pedestrian program. The combined program has five full-time staff.

Toronto, Ontario: The City Cycling Committee and bicycle program staff have recently undergone a major bicycle plan revision. Promotional activities (Bike-to-Work Week) are another feature of program activities. Pedestrian advocacy in the city is also developing.

Boulder, CO: The Alternative Transportation Center is responsible for enhancing walking and bicycling in a city that also hosts a major pedestrian conference and organizes a bike to workday event annually. Changes to the highway system and educational programs are key program elements.

Programs in Portland and Eugene, Oregon, and Calgary, Alberta, are also described in more detail.

Common Elements of Success

Certain prerequisites or common elements emerge from these various successful bicycle and pedestrian programs:

- Full-time bicycle and pedestrian staff positions;
- Citizen advocates and support, advisory committees; and
- The importance of integrating bicycling and walking programs into the everyday operation of Government.

The new surface transportation legislation passed by Congress in November 1991 requires every State to have a bicycle and pedestrian coordinator. Every metropolitan area could also

have such a position, and both State and local staff can be backed by active citizen advisory boards.

Introduction

In October 1990, Congress appropriated \$1 million for a National Bicycling and Walking Study, to be carried out by the Department of Transportation. The aim of the study is to determine the potential of bicycling and walking as modes of transportation in the United States, and to determine the costs and actions necessary to realize this potential.

A significant part of the study is dedicated to finding out how State and local governments already deal with bicycling and walking, as this will help identify the issues and problems associated with promoting these modes.

In carrying out the national study, the Federal Highway Administration commissioned a number of detailed case studies. One of the case studies deemed necessary was an analysis of existing bicycle and pedestrian programs at the provincial, State, and local level in both Canada and the United States.

There are a number of communities throughout the country where bicycling and walking have been promoted and encouraged by local, State, and provincial Government agencies, and where levels of bicycling and walking are high. This case study begins by describing a variety of possible measures of success by which one might judge or compare bicycle and pedestrian programs.

The next phase of the study was to examine those successful examples and to determine some of the common characteristics of those communities. These are identified and discussed in the final section of the report.

1. What Is a Successful Bicycle or Pedestrian Program?

There are a number of different, equally valid, indices that can be used to determine the success or failure of bicycle and pedestrian programs. The temptation to try and rank cities and States against one another for their “walkability” or “bicycle-friendliness” frequently gets the better of people, and in recent years magazines and membership groups alike have tried.

Bicycling magazine has twice asked readers to nominate their “Best Cities for Bicycling” in North America and is currently researching an article on the best and worst cities in the world for bicycling. The results of the two North American surveys were (1):

<u>1988</u>	<u>1990</u>
Seattle, WA	Seattle, WA
Missoula, MT	Palo Alto, CA
Eugene, OR	San Diego, CA
Washington, DC	Boulder, CO
Indianapolis, IN	Davis, CA
Ann Arbor, MI	Gainesville, FL
Bloomington, IN	Eugene, OR
Calgary, Alberta	Montreal, Quebec
Redmond, WA	Madison, WI
Palo Alto, CA	Missoula, MT

In the 1990 survey, honorable mentions were also given to Ann Arbor, Michigan; Arlington, Virginia; Minneapolis, Minnesota; Toronto, Ontario; and Calgary, Alberta. New York City; Orlando, Florida; and Pittsburgh, Pennsylvania, were singled out as being among the worst places for bicycling.

Walking magazine surveyed United States cities for their walkability in 1991, and listed as their top 10 cities (2):

San Francisco, CA	Savannah, GA
Washington, DC	Portland, OR
Boulder, CO	New York, NY
Boston, MA	Chicago, IL
Philadelphia, PA	New Orleans, LA

The feature sought by author Dan Zevin was, "An environment that makes it more compelling to stroll the sidewalks than to see it from behind a steering wheel."

In addition, researchers looked for:

"Compact cities where urban sprawl hasn't made driving a necessity and walkers' destinations are within a 15-to 20-minute walk of each other. Public transportation was another concern. City walkers need a network of buses, subways or trolleys to bring them back after covering lots of ground.

"Visual variety was added to our list: Pedestrian level stores mixed with residences and businesses. Varied architecture. Diverse neighborhoods and lively street life energized by sidewalk vendors, entertainers, and window-shoppers."

"Finally, we considered the city's support for walkers: widened sidewalks, auto-restricted zones, and amenities such as benches, signs, and fountains."

In 1989, the League of American Wheelmen ranked the performance of States in relation to bicycle policies, rules, and regulations (3). The top five States were Arizona, California, Florida, Ohio, and Oregon. The worst were South Carolina, New Mexico, Montana, Louisiana, Missouri, Alabama, West Virginia, and Wyoming.

The difficulties associated with such rankings are enormous. Montana and Wyoming are great places to ride bicycles, but little has been done at the State level to actively encourage bicycling. Seattle has twice been voted best city for bicycling, but less than 2 percent of journeys are made by bike in the city. New York City was voted among the worst, but enjoys a higher weekday level of bicycle activity than Seattle.

Conversely, the City of Seattle is one of very few metropolitan areas with a specific pedestrian program, but does not appear in the top 10 cities for walking. Boulder, Colorado, is the only city on the list that has such a staff position, soon to be joined by Portland, Oregon.

Analyzing successful provincial, State, and local bicycle programs thus requires a discussion of how "success" can actually be measured.

Increased Levels of Bicycling and Walking

One of the most obvious indicators of success is the level of bicycling or walking generated or stimulated by the activities of a particular program. However, this is a difficult number to obtain in most States and cities. As other case studies carried out as part of the National Bicycling and Walking Study reveal, accurate and meaningful statistics about bicycle and pedestrian activity are rarely collected, and often unreliable (4).

However, the city of Eugene does provide a clear example of where the activities of a bicycle program helped stimulate bicycle use. The bicycle program was started in 1970 and throughout the seventies a network of bikeways was developed. In 1973, 16 miles (25 kms) of bikeway were built or committed, and by 1980 this network had been extended to 70 miles (114 kms).

Bicycle counts taken in 1978 revealed an average increase of 76 percent in the number of bicyclists at the same locations in 1971. At one important connector in the network, completed in 1978, the number of cyclists rose from 1,000 a day using an unofficial dirt path in 1971 to as high as 3,600 a day using the new link in 1980.

The Greenway Bridge, built in 1977, provides a vital crossing of the Willamette River. The year the bridge opened, summer weekday counts averaged 300 cyclists. By 1982 this had risen to 1100, and half of these trips would previously have been made by automobile (5).

Accident Reductions

San Diego Bicycle Coordinator Michael Jackson reports that the installation of on-street bike lanes in the city's Tierrasanta community has reduced accidents and crime and also improved the appearance of the community (6).

The Tierrasanta community agreed to the removal of on-street parking and the provision of bike lanes along three roads, in September 1989. During the preceding school year, there had been nine bicycle crashes and one bicyclist killed in the community, but this fell to just three injury-only crashes in the year that followed installation of the lanes.

Similar benefits of isolated facilities are reported in other communities around the country. A "bicycle boulevard" installed in the city of Palo Alto has encouraged a shift of bicyclists from two parallel materials with little space for cyclists on to the boulevard, and motor vehicle traffic along the boulevard has been cut by 50 percent. There has been no increase in bicycle accidents along the corridor, despite an increase in bicycle use (7).

The city of Eugene reports the same effect over a much wider area. An information sheet on the city's program details the installation of bike lanes as part of the overall bicycle program and says,

"Striping lowered accident rates in Eugene. Accident data gathered before and after 5 years of bikeway operation showed that streets with striped lanes had lower accident rates than before." (8)

In recent years, the city of Seattle has been installing traffic circles in neighborhood streets, at the request of residents, to slow motor vehicles. The number of car accidents has

fallen and early indications are that bicycle and pedestrian accident rates will also decline on these streets.

One inspiration behind the Florida bicycle and pedestrian program was the terrible traffic crash rates being suffered by bicyclists and pedestrians. While the State still ranks as the worst in these two categories, individual communities are reporting significant progress towards containing the problem. For example, the Pinellas County MPO reported in July 1991, that:

“Over the past 8-10 years, we have had a 30 percent increase in population and a 50 percent increase in vehicle miles traveled in the country, but the bicycle fatality rate has remained stable, or has slightly decreased. It is the presumption at the community level that this favorable trend is attributable to the fact that all State and county highway improvements during this period have included wide-curb lanes or paved shoulders.” (9)

Another well-known and active bicycle program has been in operation for many years in Minnesota, where the bicycle fatality rate has “declined substantially since 1975,” according to the State bicycle advisory board. (10)

State and local agencies have made very good use of programs such as “Willy Whistle,” developed by the National Highway Traffic Safety Administration. In an article on child pedestrian injuries and the use of Willy Whistle in Los Angeles; Columbus, Ohio; and Milwaukee, Wisconsin:

“The authors reported that pedestrian injuries involving mid-block dart-outs and dashes by children under age 14 dropped by 18 percent in Los Angeles and Milwaukee, and by 36 percent in Columbus after the introduction of the program. Other types of child pedestrian injuries decreased by 3 percent.” (11)

User-Friendly Infrastructure

Many bicycle and pedestrian programs measure success by the number of miles of facilities that have been developed for use by bicyclists and pedestrians. For example, the city of Calgary boasts 180 kms (110 miles) of city pathways (with an additional 46 kms (24 miles) in a regional park close-by) and a 140-km (87-mile) network of bikeways (12).

Other successful cities and counties include (13):

Location	Miles (kms)	Type of Bikeway
Seattle, Washington	145 (235)	(various facilities)
Madison, WI	100 (160)	(various facilities)
Tucson, AZ	300 (480)	(various facilities)
San Diego, CA	530 (854)	64 miles (103 kms) bike path 334 miles (537 kms) bike lanes 132 miles (214 kms) bike route
Dallas, TX	370 (594)	(all bike routes)
Palo Alto, CA	60 (97)	(various facilities)
Arlington County, VA	85 (137)	37 miles (59 kms) trail 47 miles (75 kms) bike routes
Boulder, CO	50 (80)	(various facilities)
Eugene, OR	80 (130)	(various facilities)

Walking magazine's article on the 10 best cities for walking included some statistics on walking facilities (14). For example:

- San Francisco, California: 120-mile (192 km) ridgeline path; 6 auto-restricted zones; three pedestrian malls; 14.4 miles (23 kms) of waterfront path and 250 parks.
- Portland, Oregon: 140 miles (227 kms) of off-road trails; 30 miles (48 kms) of waterfront walkways; two auto-restricted zones.
- Boulder, Colorado: "The city boasts more than 150 miles (240 kms) of trails, paths, and bicycle lanes."
- Chicago, Illinois: 28-mile (45 km) boulevard system linking parks; 25 miles (40 kms) of lakefront paths, downtown river-front paths, and auto-restricted zone.

States have also taken an active role in developing a bicycle-friendly infrastructure. For example, the State of Oregon bikeway program has been involved in the development of 530 miles (850 kms) of bikeway (280 miles (448 kms) of bike lanes, 120 miles (192 kms) of bike paths, and 130 miles (208 kms) of shoulder widening). In addition, the program has signed hundreds of miles of bike routes, including the 370-mile (594-km) Oregon Coast Bike Route (15).

A user-friendly infrastructure means more than just miles of bikeways, trails, and sidewalks. The provision of curb-cuts and ramps, bicycle parking, places to sit, adequate maintenance, and special facilities at important (dangerous or key) locations throughout the community are also important.

The city of Seattle has recognized this and through its Bike Spot and Pedestrian Spot Improvement program provides a remarkable level of service to walkers and bikers in the city. The improvements are low cost and quick to do—thereby showing the responsiveness of the city to the concerns of its citizenry.

The bike spot program implements up to 150 improvements every year, in direct response to citizen requests. Improvements include replacing damaged signs, installing bicycle parking stands and rubberized railroad crossings, and filling in potholes and dangerous street surfaces.

The pedestrian program, coupled with a \$440,000 investment in curb-cuts and ramps, responds in the same way to signing, sidewalk, and crosswalk problems identified by the public (16).

Adequate Levels of Expenditure

Another of the case studies completed as part of the National Bicycling and Walking Study details the ways in which funding for bicycle and pedestrian programs and projects has been found (17). A wide variety of Federal, State and local, sources have been used.

Among the highest spending States are:

Florida: An estimated \$8-10 million per year has been invested in making new and improved highways safer and more attractive for bicyclists and pedestrians. Highway 7 designs routinely include sidewalks, wide-curb lanes, shoulders, and bike lanes (18).

Oregon: Legislation passed in 1971 requires the State Department of Transportation and cities and counties to spend at least 1 percent of highway funds on bicycle and pedestrian facilities. In 1991, this amounted to \$2.8 million at the State level and \$1.75 million at the city and county level (19).

Minnesota: The State bicycle program had an expenditure of approximately \$4.3 million in 1990, with funds coming from at least seven State agencies and sources. The State bicycle advisory board is recommending an increase to \$10 million per annum by 1999 (20).

At the city and county level, bicycle and pedestrian program expenditures are significant in a number of communities:

San Diego: a county-wide sales tax has dedicated an annual expenditure of more than \$1 million to bicycle and pedestrian improvements, much of which will be used for facility development (21).

Seattle: The city plans to spend \$440,000 on curb cuts and ramps for better pedestrian and wheelchair access, together with over \$100,000 on the bike and pedestrian spot improvement programs (22).

Although there is no separate line-item in the city budget, the coordinator estimates more than \$4 million is spent annually on improvements for bicyclists and pedestrians (23).

Other communities dedicating significant financial resources to bicycle and pedestrian programs include (24):

Phoenix, AZ	\$500,000	Bicycle facilities
Arlington, VA	\$200,000	Trails and bikeways
Madison, WI	\$100,000	Bike & ped projects
Portland, OR	\$160,000	Alternative transportation
Edmonton, Alberta	\$500,000	Bicycle improvements
Vancouver, B.C	\$850,000	Bicycle facilities
Hull, Quebec	\$ 60,000	Bicycle facilities

Staff Levels

Just as important as having funds available for bicycle and pedestrian improvements is having the staff levels necessary to integrate bicycle and pedestrian provisions and policies into the routine activity of Government agencies.

One of the largest bicycle programs in the nation is in North Carolina, where six full-time staff are dedicated to bicycle facility design and implementation, education programs, and public relations. Bicycle Coordinator Curtis Yates plans to broaden the scope of the program to include pedestrian issues and activities, and the appointment of a full-time pedestrian coordinator (25).

The city of Seattle has five staff working in their bicycle and pedestrian program, and both Boulder, Colorado, and San Diego, California, have bicycle programs at the city and county level working together. The Boulder program is part of a larger Alternative Transportation Center, which also includes full-time pedestrian staff positions.

The greatest concentration of bicycle and pedestrian program staff, however, is in Florida. The State program comprises three full-time staff and more than 20 local communities have active bicycle and pedestrian programs—some with two or more staff. The Orlando-area coordinator estimates that as many as 100 Government agency staff in his region have some bicycle or pedestrian responsibility as part of their routine workload, while not actually working for the program itself (26).

Florida is closely followed by Oregon, where the three full-time bikeway and bike safety program staff are complemented by bicycle contacts in every city and county in the State (27).

The city of Portland is about to add a full-time pedestrian coordinator to the full-time bicycle coordinator position that has been operating for many years.

In Texas and Illinois the State transportation departments have both recently appointed bicycle coordinators (full-time in Texas), and have also asked each of their district offices—nine in Illinois and 24 in Texas—to appoint a bicycle contact person.

Education and Public Information

Almost every bicycle and pedestrian program in the country produces safety and education literature aimed at bicyclists, pedestrians, motor vehicle drivers, or a combination of the three. The production of a brochure or safety program, however, does not constitute success on its own. Success depends on the number of people who actually use and learn from the programs or materials.

The Pennsylvania Department of Transportation is implementing a pedestrian public information and education campaign, Walk Smart, across the State. Together with the State education agency, the program will ensure that every child in the State will receive age-appropriate instruction in pedestrian safety education.

Over 950,000 children in the Los Angeles area have been reached by the SAFE MOVES program, a school-based program teaching bicycle traffic safety to elementary age children.

Every elementary school in Ohio and Arizona received copies of the “Complete Bicycle Education Program,” and the successor to the CBEP is being distributed statewide by Government agencies in Rhode Island, North Carolina, Wisconsin, and Colorado (28).

The 4-H Youth Development, Minnesota Extension Service, and the University of Minnesota stage a Pedal Power camp each summer for up to 100 people. The Camp is a week-long workshop for teenagers designed to teach them safe-cycling skills and to give them the knowledge and confidence to organize bike safety events themselves (29).

The city of Milwaukee is known as a pedestrian-friendly city and has promoted pedestrian safety for school-age children through a variety of programs. Each summer the Milwaukee Safety Commission sponsors a “Safety Fest” that regularly attracts 30,000 children.

The North Carolina bicycle program has always produced a wealth of good safety, education, and public information materials. More than 120 communities within the State have sought bicycle helmet campaign information; the bicycle program distributes up to 12,000 calendars of bicycling events each year; and over 10,000 maps of the bicycling highways system have been mailed to in- and out-of-state inquirers (30).

Communities have also used television and radio public service announcements, back-of-bus posters, billboards, brochures, and all manner of media to get safety and education messages across to the general public. The city of Palo Alto regularly includes information on bicycling in utility bill mailings to every resident in the city.

Events

Bicycle and pedestrian programs have been involved in a wide variety of promotional events. Sometimes they are the primary organizers of the events themselves, such as the Boulder Bike Week celebration, or receive a tremendous boost from the activities, such as bicycle program activities in Montreal, Quebec, which benefit from the Tour de l'Ile de Montreal.

As with the production of education and safety materials, the initiation of events is not of itself a good indicator of success. Indeed, many bicycle and pedestrian program staff feel this type of activity is best left to the private sector and advocacy groups rather than Government agency personnel who can better spend their time working within their agency.

Some events and promotions are so impressive and so influential in a community to warrant the attribution of success. For example, the city of Boulder has celebrated Bike-to-Work Day and Bike-to-Work Week more than 5 years. Early activities grew into plans for an event spanning the entire Front Range and involving communities, employers, and Government agencies.

However, just within the city and county of Boulder itself, the event has had a major impact. In 1990 more than 4,500 riders participated in Bike-to-Work Day, almost 10 percent of the population of the city (31).

Similar celebrations in Toronto have had a remarkable impact on the profile of the city bicycle program and on bicycling in the city in general. More than 2,000 bicycle commuters registered for prizes in the 1990 bike week celebrations, and over 100 corporations and organizations participated in some way. Media coverage for the event included 18 TV and radio spots and 41 newspaper, magazine, and newsletter articles (32).

The city of Montreal is famous for hosting the largest single one-day bike ride in the world. Every June, more than 40,000 cyclists take to the streets on Montreal in the Tour de l'Ile de Montreal, riding around a closed circuit of city streets. Such a display of support for bicycling in the city has helped boost the claims for an active bicycle program, and the city now has a bicycle coordinator and a significant budget for developing a network of bicycle routes across the city.

The Orlando area has started to turn around from being voted one of the worst places for bicycling in the United States to a good place for bicycling. One key strategy has been a Bike-to-Work week that includes a bicycle commuter race between a bicyclist and a car driver—and

the tremendous media coverage given to the events has significantly improved the visibility and credibility of bicycling.

To date pedestrian events have not had the same degree of attention or success. While mall walking and charitable walking events such as the Walk for Multiple Sclerosis have become more popular, none have had an impact on city or county Government agencies, and very few are in any way connected with Government agencies. Walking is being used as an activity by the charities, and not to promote walking in and of itself.

Integration of Bicycling and Walking

Over the last 5 years the concept of “institutionalization” has become very popular within the bicycle world, and is equally valid and important with regard to pedestrian issues. Bicycle program staff and advocates have realized there is only so much one staff person—or even a program with five or six people—can do to change a city, county, or State for the benefit of bicyclists and pedestrians. There is simply too much to do.

Thus, bicycle programs have become more focused on ensuring that the routine work of Government agencies, particularly transportation agencies, includes appropriate consideration of the nonmotorized modes. This has involved changes to State and local legal codes and ordinances, regulatory changes, project review, policy and plan development, and the training of agency personnel.

For example, in the preceding pages little mention was made of either California or New Jersey. During the 1970s and early 1980s, both States had active bicycle programs with full-time coordinators. Both programs were successful in developing the kind of policies that, in the case of California, actually made them redundant for a while. In particular, both States developed policies and guidance that enabled bicycle provision to become a routine part of highway designs, to the extent that almost every highway built in those States has wide-curb lanes, shoulders, or striped bike lanes.

In California the transportation agency revived the Office of Bicycle Facilities (in 1990) and the New Jersey DOT has a part-time Bicycle and Pedestrian Advocate.

Bicycle programs in Eugene, Oregon, and Madison, Wisconsin, show the same signs of institutionalization. Developers are required to install a minimum amount of bicycle parking in new projects, and are often also required to provide facilities in and through developments, such as bike lanes or routes.

One of the early goals of the Florida bicycle program was a revision of the State vehicle code as it related to bicycles. In 1983 this revision took place and, among other things, removed the law requiring bicyclists to use any sidepath provided for bicycle use, regardless of quality,

and improved the lighting requirements for bicyclists riding at night. The Florida program has also been very successful in incorporating bicycle and pedestrian improvements in new highways.

By contrast, until May, 1992, the province of Ontario had a restrictive set of bicycle policies which effectively stifled proactive bicycle programs for many years. The policy was developed in 1974 and updated in 1977 and 1981. The 1981 version concluded:

“The ministry should not fund the bicycle as a viable mode of urban transportation due to limitations imposed by weather, trip length, comfort, speed, and mobility.”

Among the specific policies adopted by the Ministry of Transportation at that time was one stating that paved shoulders would not be provided on provincial roads for bicycle use. The Ministry did not believe bicycle use would help solve Canada's long-term energy crisis and that separate facility construction could not be justified. Support was only to be given to education and safety campaigns aimed at cyclists (33).

Plans

A key element along the road to institutionalization is the development of good planning documents. With passage of the new Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), the importance of planning has increased significantly.

Both Vancouver, British Columbia, and Toronto, Ontario, have detailed and ambitious bicycle plans that are being implemented. Many of the places with extensive bicycle and pedestrian networks have started with a good plan, for example Eugene, Oregon; Madison, Wisconsin; and North Carolina, where more than 2,000 miles of bicycling highways have been identified and signed as bicycle routes (34).

In recent months comprehensive bicycle plans have been developed by Pasadena; and Santa Monica, California; Flagstaff, Arizona; Lake County, Florida; the States of Delaware, Minnesota and Oregon; Pueblo, Colorado, the Metropolitan Washington, DC Council of Governments, and the city of San Jose. In 1993, cities such as Houston, Texas, and Denver, Colorado, and the State of New Jersey are developing bicycle plans (35).

Commentary

Bicycle and pedestrian program activities are remarkably varied. The opportunities for success depend on many issues and actions beyond the direct control of a bicycle coordinator or pedestrian program manager. What works in some communities would fail dismally in others. Progress has been rapid in some and slow in others. For each of the successful communities mentioned above, there are 10 cities or counties doing nothing to encourage or improve conditions for bicycling and walking.

Each of the indicators of success is valid depending on the circumstances of the State, province, or locality engaged in a program. In some communities, such as Florida, terrible accident statistics have been the spur to action. In Minnesota, the economics of encouraging bicycle use have appealed to advocates, politicians, and agency staff alike (36).

In the years ahead, State and local plans and programs are likely to be based on performance targets to a greater and greater extent. Oregon is leading the way with passage in 1991 of a Transportation Planning Rule requiring metropolitan areas to reduce vehicle miles traveled over the next 30 years (37).

Other communities, such as Boulder, Colorado, have set themselves the target of a 15 percent modal shift away from single-occupant vehicles to some other form of transportation—including bicycling, walking, transit, and carpooling (38).

In areas struggling to comply with the Clean Air Act, increasing use is being made of targets that apply to employers. Regulation XV in Los Angeles was an early example of this kind of local ordinance requiring employers to reach average vehicle ridership targets among their employees.

As these performance-based programs develop, bicycle and pedestrian programs will have to become more sophisticated in their ability to quantify success in some or all of the ways outlined above. This is especially true if pedestrian programs are to become as common as bicycle programs.

Another important driving force behind the development of bicycle and pedestrian programs will be the new Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA). Not only does ISTEA mandate each State to have a bicycle and pedestrian coordinator, but the new legislation also requires each State to develop a long-range bicycle and pedestrian plan as part of their long-range transportation planning process.

Metropolitan areas are also required to consider the needs of bicyclists and pedestrians in the development of their plans and programs. For both metropolitan areas and States, significant funding is available for the implementation of such plans and programs.

2. Successful Programs in Detail

A small number of bicycle and pedestrian programs have been involved in most of the varied activities described in the previous section. As such, they provide a valuable insight into the kind of comprehensive programs necessary to affect real change in the physical and social climate for bicycling and walking.

Florida

In October 1979, the Florida Bicycle Program was created by an Executive Order of the Governor, based on the recommendations of a Task Force set up by Governor Graham some months earlier. The new program was given a number of specific goals to achieve, detailed in a special Aluminum Anniversary report on the program, prepared in October 1989 (39).

The program currently has a full-time staff of three working on both bicycle and pedestrian activities. Over the life of the program, it is estimated that close to \$100 million of investment has gone into making the urban area State highway system more bicycle- and pedestrian-friendly. As a matter of routine design, new and improved urban area highways now incorporate shoulders, wide-curb lanes, bike lanes, sidewalks, and other appropriate facilities.

Another \$10 million has been invested in nonconstruction activities such as education and safety programs and staff positions at the community level.

All this investment has been generated from an initial outlay of only \$100,000 per year (average) to staff the program in the Florida DOT. The highway improvements save a minimum of \$1 million in preventing tort liability cases from being brought against the State, and the \$100 million expenditure figure does not include locally-generated improvements in many of the counties that have adopted the same construction and design requirements for new highways as FDOT.

Early in the life of the program a number of important institutional changes were made. In 1982, FDOT adopted a new Bicycle Facility Design Guide incorporating state-of-the-art information on the design and planning of bicycle facilities (40).

One year later, the FDOT bicycle program was instrumental in revising the State vehicle code to reflect a more comprehensive, modern, and fair set of bicycle-related laws. The

restrictive and potentially dangerous mandatory sidepath law was repealed and the new code included the strict new lighting requirements (41).

Until 1985, the 20-person Florida Bicycle Advisory Council met regularly to “advise the Governor and Florida Bicycle Coordinator on matters pertaining to bicycling in the State of Florida.” The Council included citizen and Government agency representatives, helping to foster cooperation between the two interests (42).

During the later half of the life of the program the focus has concentrated on three major activities. First, a concerted effort has been made to create bicycle and pedestrian programs in every metropolitan area in the State.

Working with the Governor’s Energy Office, FDOT has helped generate up to \$500,000 annually in matching funds to local communities to create bicycle and pedestrian coordinator positions. There are currently more than 20 local coordinator positions, covering 90 percent of the State’s population. Matching grants of \$24,000 (to be matched by the local communities) have stimulated the majority of these positions, and many have gone on to become self-supporting. The Energy Office believes the bicycle and pedestrian coordinator position funding is the best ongoing use of public funds they have ever made (43).

Second, pedestrian issues and activities have been given a much higher profile. Most of the local programs have a combined bicycle and pedestrian coordinator, and FDOT has recently awarded a \$185,000 grant to the University of Central Florida to study the walking needs of the older pedestrian.

Third, Florida has invested more effort and money than most States in developing education and safety programs for bicyclists, pedestrians, and motorists. The State has developed the Bike-Ed curriculum for grades K-8, and the program for grades 3, 4, and 5 are already in use in 10 county school systems. Polk County was the first to appoint a full-time Bike-Ed staff position overseeing implementation of the program in every school in the county, and Dade County has followed suit.

The ongoing commitment to education includes the development of interactive video programs for bicycle, pedestrian, and school bus safety, backed by a \$200,000 investment by the Bureau of Public Safety.

In addition, the Florida Bicycle Program has been involved in a wide range of activities to improve the environment for bicyclists and pedestrians throughout the State, including:

Training

FDOT hired consultants to provide 3 weeks of training, over an 18-month period, for the community bicycle and pedestrian coordinators.

The DOT also coordinated a Let Kids Live Conference to develop efforts in bicycle, pedestrian, and school bus safety.

Throughout the spring of 1992, FDOT staff presented a series of 40 pedestrian facility workshops around the State for local traffic engineers and planners.

Publications

In addition to the 1982 "Bicycle Facilities Guide," FDOT has developed a series of publications of great value to bicycle and pedestrian programs throughout the nation, including:

"Annotated Bibliography for Pedestrian Planning" (1989) reviews almost 100 papers on pedestrian planning, design concepts, accident characteristics, data collection, child and elderly pedestrian issues and pedestrian needs.

"Developing Pedestrian Plans" provides an invaluable resource to pedestrian program staff with details on building community support, public relations activities, and a wide variety of information on pedestrian issues.

"Florida Pedestrian System Plan" (1989) contains a definition of walkability, identifies the current problems associated with walking in Florida, and provides an overview of the elements of a pedestrian system plan.

"Florida Bicycle Sketch Plan" (1989) provides a model bicycle program with goals and objectives capable of being applied to almost any State.

"1990 Transportation Costs" is a guide to the cost of a variety of different facilities including bicycle and pedestrian facilities such as bike lanes, shoulders, and sidewalks of various widths.

Miscellaneous Activities

- FDOT was instrumental in the formation of the Bicycle Commuter Center, designed to provide technical assistance and information to employers and local Governments seeking to increase the level of bicycle commuting.
- The bicycle program has been a leader in the field of bicycle helmet promotion, including the development of information brochures, pilot projects to market bicycle helmets, and recently as the benefactor of a \$200,000, 2-year study undertaken by the Center for Disease Control to study the impact of different promotion and mandatory use programs on levels of use.

- FDOT is the primary sponsor of a study being undertaken at the University of Florida, Gainesville, to look at school trip-making patterns and safety among children.

With more than 20 local bicycle and pedestrian coordinators active throughout the State, the FDOT bicycle program is involved in but a fraction of the work being done to improve conditions for nonmotorized users. However, without the initial involvement of the FDOT program and the continuing technical assistance provided by the program staff it is doubtful how much of this activity would have been possible. Some activities in the metropolitan areas include:

Jacksonville: a highly visible bicycle safety and promotion campaign was developed using posters on transit vehicles.

Orlando: bike-to-work day celebrations have generated an enormous amount of publicity for bicycling, the bicycle program and bicycle safety. A bicycle/car/bus commuter race resulted in a close victory for the bicyclist over an 11-mile course.

Volusia County: is developing a special pedestrian safety campaign to coincide with spring break, when alcohol-related pedestrian-motor vehicle crashes reach a peak.

Pinellas County: using a rail abandonment originally purchased by the Florida DOT, a trail is being developed that crosses the county. A \$4.5 million bond issue was approved by county voters for this project.

Miami Beach: an innovative design has been developed for a beach bike path in South Miami Beach, to cost close to \$500,000, that minimizes environmental damage to the waterfront.

Comprehensive bicycle plans: most of the 20 or more communities with coordinators have developed and approved comprehensive bicycle and pedestrian plans. Orange County and Osceola County in the Orlando area are the most recent examples.

Much of this activity would not be happening without the State bicycle and pedestrian program and a network of local coordinators throughout the State. The Aluminum Report prepared by the program staff highlights grants worth \$710,000 generated by the local programs, which would not otherwise be available. This far outweighs the \$480,000 invested in the programs. The report goes on to say:

“The big return is at the community level. Pinellas is investing \$4.5 million in a county long bike trail. Broward County has obtained \$2.5 million in corporate and Government funds to build North America’s best velodrome. Orlando is building a safety city in the multimillion dollar range.

“Miami is working out details for an half-million dollar beach bicycle path. Polk County already has all 60 of their area schools offering Bike Ed. Other communities are launching programs and facilities that will exceed a total of \$60 million over the next 30 years.” (44)

Combining all the costs and benefits of the State and local programs, the State bicycle coordinator, Dan Burden, estimates that:

“Just considering minimal returns, such as through new grants not previously available to the Department, the return [on an annual investment of \$100,000] is about 10:1. Using the total improvements generated by community coordinators and improved highway designs, the returns come closer to 200:1.” (44)

North Carolina

The North Carolina bicycle program started back in 1974 with the acceptance by the State legislature of “Bikeways for North Carolina: Bicycle Program Requisites.” The author of the report, Curtis Yates, was appointed the State’s bicycle coordinator that year, and now oversees one of the premier bicycle programs in the nation with seven full-time staff and an annual investment program of over \$1 million.

In the early days of the program there was little money and staff devoted to the program. Yates was joined by assistant Mary Meletioun in 1975, but it was not until 1977 that bikeways became a legitimate highway fund expenditure. A bicycle advisory committee was created by legislation in the same year.

It took almost 5 years before the State Board of Transportation adopted a detailed bicycle policy, which was updated in 1991, that lent more legitimacy to efforts to include bicycle provisions in highway construction and improvement projects. Planning, design, construction, maintenance, and funding guidelines in the policy provided some substance and credibility to the bicycle program, but there was still very little serious investment.

During the 1970s and early 1980s, the North Carolina program was successful in getting highway safety program funds for educational materials and projects. A series of safety posters and public service announcements were developed, along with display booths, pamphlets, and road shows capable of being used throughout the State. Skills courses for training child and adult bicyclists were developed and a supplement to the Driver’s Education Program was prepared to influence first-time drivers.

It was not until the program was 10 years old that it received an independent operating budget—of \$6,000. Even with seven full-time staff the program receives only \$16,000 a year for travel, office equipment, and special items.

The next milestone for the program came in 1987 when \$250,000 was included in the State Transportation Improvement Program (TIP) for bicycle projects. This has steadily been increased to \$1 million a year for 1991 and 1992. Originally, the State had intended to use Federal funds for most of these projects, but the application and approval process was considered too cumbersome and time-consuming. All the bicycle projects in the TIP are funded with State highway dollars.

The program has developed detailed information on how to get bicycle projects into the TIP project list. Local Government agencies and bicycle advocates in the State are now able to develop their proposals for projects and submit them to the DOT. An annual round of hearings provides an opportunity for the local communities to support bicycle projects.

Much of the investment has been focused on the network of bicycling highways developed by the program as part of its original mission statement. More than 2,000 miles of State highways have been mapped and 1,500 miles signposted to create a statewide system of bikeways. A further 1,000 miles have been identified, but not yet mapped.

Curtis Yates believes the bicycling highways gave a clear focus to the entire highway department. Engineers and planners quickly learned to check with the bicycle highways map to see if the project they were working on might need to have wider shoulders, bike route signing or preferential maintenance as part of the network.

The bicycle highways have also provided a backbone or starting point for systems being developed at the county and city level. Eight county programs and one regional map have already used the network as a base, and another five urban communities are planning to develop bike maps in the near future.

In addition to providing and stimulating the development of bicycle facilities, the North Carolina program has also produced some of the best publications and program materials available in the nation, including:

- *The Basics of Bicycling (1991)* is an education program for elementary school children comprising an award-winning 35-minute video and detailed workbook. Seven lessons (two in-class and five on-bike) take children and teacher through the basics needed for safe and enjoyable bicycling.
- *The Bicycle Helmet Campaign Guide (1991)* is a 50-page guide developed by Bike centennial that provides all the information necessary to run a local bicycle helmet promotion campaign. More than 120 communities in the State had requested such information over the years.
- *Bicycle maps (1991)*. The bicycle program has developed two state-of-the-art bicycle maps for Wilmington and Durham, using computer-generated graphics.

- The Bicycling Highways maps are requested by more than 10,000 in- and out-of-state inquirers each year, and the design of the maps was used by neighboring Tennessee.
- *Some Myths and Errors in the Field of Bicycle Facility and Program Development* (1979) provides a useful checklist of common errors and myths that “plague” many bicycle planning documents.
- *Ten Easy Steps* contains suggestions intended to highlight key areas in need of consideration by any agency sponsoring a bicycle facility project.
- *From Need to Bicycle Improvement—the Transportation Improvement Program Process* (1990) describes how local areas can request assistance for bicycle projects from the State DOT.
- *Streetwise Cycling* (1990) is a guide to safe cycling practices.

In addition, a calendar of events is produced each year and distributed to 12,000 people. A variety of fact sheets have also been developed on bicycle helmets, local bicycle clubs and stores, and safety and education materials.

A substantial part of the success of the overall bicycle program can be attributed to this range of literature and information that keeps bicycling issues before the public. Another major factor has been the extent to which bicycling has become integrated into the routine operation of the DOT.

Despite this, the program staff still review 15 to 20 highway projects every week to ensure that opportunities for improving the bicycling environment are not missed, and to see that unfriendly or dangerous highways designs are not approved.

In addition to Yates and Meletiou, the program staff comprise two traffic engineers; a planning and research specialist; a safety, education, and touring specialist; and an artist/illustrator.

In 1992, bicycle program staff plan to expand the scope of the program to include pedestrian issues and activities (45).

Minnesota

Minnesota adults are bicyclists at nearly twice the national average, according to the recently published State bicycle plan (46). Two-thirds of all Minnesotans ride at least once a year, and almost half of the estimated 300 million bicycle miles traveled in the State are for transportation purposes (1989). Ten percent of adults ride to work at least once every year.

With that level of activity, it is not surprising to learn Minnesota has one of the most progressive bicycle plans in the country and has a great many of the attributes of a bicycle-friendly State. The Minnesota Department of Transportation (MN/DOT) employs a full-time bicycle coordinator to work with other State agencies and to develop policies and plans for the State. MN/DOT also has two bicycle program staff within their program division, concentrating on bikeway design and implementation.

MN/DOT oversees 12,000 miles (20,000 kms) of trunk highways, carrying 60 percent of the traffic. The 1987 State bicycle system plan identified 4,467 miles (7,147 kms) of major bicycle corridors on the trunk highway system, of which 2,812 miles (4,499 kms) have adequate shoulder widths considered "suitable" for bicycling. Of the remaining "unsuitable" miles, 1,412 miles (2,259 kms) require shoulder improvements and 245 miles (392 kms) require off-highway trails and paths. The total estimated cost of these improvements is close to \$30 million (47).

MN/DOT is also seeking to ensure that all their highway projects include consideration of bicyclists. A bicycle evaluation worksheet is completed for each project at the preliminary design and impact stage, and covers the following:

- Project identification and location;
- Current highway design;
- Current traffic flows and types;
- These two categories provide a current quality rating;
- Proposed design;
- Future quality rating with the new improvements;
- Other issues affecting bicycle use;
- Future planned improvements in the corridor (such as a trail); and
- Summary.

Once this evaluation has been completed, the AASHTO "Guide to the Development of Bicycle Facilities" and MN/DOT's "Bikeway Design Manual" (48) are used to determine what bicycle accommodation to make.

Minnesota is certainly one of the best documented States in the country in relation to bicycling. For example, the State plan estimates only 24 percent of urban arterials in the State are "good" or "fair" for bicycling, 47 percent of other urban roads, 69 percent of all Minnesota roads, and 73 percent of all rural roads receive this quality rating.

Cost estimates for these improvements are also provided in the State plan. Improving 500 miles of urban arterials through a mixture of bike lane striping, traffic calming, shoulder paving, bridge/tunnel construction, and right-of-way acquisition for bike lanes and shoulders would cost \$31 million. Improvements to 500 miles of other urban roads and to 500 miles of rural roads would cost another \$44 million between 1993 and 1999.

An annual investment of this size (approximately \$16 million) would easily be offset by the annual public savings estimated from bicycle transportation in Minnesota. Even at a modest rate of just 5 cents per mile (which is less than the bicycle mileage allowance used by some local agencies to reimburse employees using bicycles), the annual public savings from bicycle transportation in 1999 will have reached \$20 million (49).

The State's formal involvement in bicycling began in 1976 with passage of legislation recognizing the benefits bicycling could bring to Minnesota, and codifying State support for bicycling. Soon after, the State Bicycle Safety Commission was created. In 1981, the first State bicycle conference was held, focusing primarily on safety issues. In 1992, the conference attracted more than 300 participants including trail and park planners, highway engineers, police departments, and bicycle advocates from Federal, State, and local jurisdictions.

The current State bicycle coordinator, Jim Dustrude, has been on board since 1985, and serves a State Bicycle Advisory Board of 23 people. Nine State agencies and 14 citizen representatives comprise the board. In addition to developing the State plan, the bicycle coordinator is involved in a wide range of public information, media, education, and outreach programs throughout the State.

At the State level, Minnesota has a unique bicycle program element. The University of Minnesota and the 4-H Cooperative Extension Program operate a very successful Community Bike Safety Project (MCBSP), with funding coming from the Department of Public Safety and the Department of Energy, from oil overcharge dollars.

The MCBSP is designed to reduce bicycle accidents and fatalities and to provide resources, information, and training to communities. Staff will conduct bike patrol training for police departments, operate the annual, week-long Pedal Power Camp for teenagers, conduct education programs for teachers, volunteers, and police departments, and also promote bicycle registration. The program helped fund an 18-month special program at the University of Minnesota Twin Cities campus designed to promote bicycle commuting.

At the local level, bicycle issues are starting to receive more attention. Since 1990, Bicycle Advisory Boards have been created in Hennepin County (within which 25 percent of the population of the State lives), and the cities of Minneapolis, St. Paul, Winona, and Shoreview. In each instance, board members are working on facility plans and a wide range of promotional and educational initiatives.

The State plan sets out some very specific goals for the Minnesota bicycle program. By the year 1999, the expectation is that:

- Bicycle miles traveled in the State will increase by an average of 10 percent per year. If achieved, over 550 million bicycle miles will be traveled in 1999, 60 percent of them for transportation purposes.

- Accident levels will have fallen by 50 percent. In the years following the start of the Minnesota State Bicycle Safety Commission, accidents fell by 40 percent.
- Every bicycle in the State will be registered. This would raise an average of \$4 million per year.
- The number of miles of urban trail will double.
- Ten percent of all Minnesota students will receive bicycle education, and every student will receive bicycle safety brochures.
- Every police department will host bicycle law enforcement seminars for their officers (50).

Oregon

An excellent description and history of the Oregon bicycle program is provided by the *State of Oregon Bicycle Master Plan*, adopted by the Oregon Transportation Commission on March 15, 1988, and published in May of that year (51). Further information is contained in an information packet compiled by the Bikeway Program Office in celebration of the program's twentieth anniversary in May 1991 (52).

In 1971, the Oregon legislature passed a remarkable piece of legislation, requiring that 1 percent of the State Highway Fund received by the Highway Division, counties, and cities, be spent on bicycle and pedestrian facilities. These footways and bikeways are required to be built in conjunction with all construction, reconstruction, or relocation roadway projects, except where no use is expected, costs are excessively disproportionate to likely use, or where public safety is compromised.

Implementing this program is the responsibility of the Oregon Department of Transportation. The Highway Division of the DOT administers the funds—which in 1991 amounted to \$2.8 million at the State level, and \$1.75 million at the city and county level—and handles bikeway planning, design, engineering, and construction, and provides technical assistance to local Government agencies. All major policies and programs must be approved by the Oregon Transportation Commission.

Within the Highway Division, the Bikeway Program Office has a full-time bikeway program manager and a full-time bikeway specialist. Between them they identify and prioritize bikeway projects, ensure the 1 percent of funds are spent on bikeways and footways, and develop policies, programs, and materials (such as maps and brochures) to improve the bicycle environment in the State.

The Highway Division is advised in its operation of the bikeway program by an eight-member advisory committee, appointed by the Governor. Members must represent an employee of a unit of Government involved in land use planning, a representative of a recognized environmental group, a person engaged in the business of selling or repairing of bicycles, a member designated by the Oregon Recreational Trails Advisory Council, and at least one of the members must be under the age of 21 at the time of appointment. Members serve for 4 years, and the committee meets quarterly.

The Advisory Committee was responsible for developing the 1988 State Bicycle Master Plan, which provides a detailed list of priorities for the program to address. Those priorities are:

- *Bikeway construction.* The Bikeway Program has been responsible for the creation of 530 miles (848 kms) of bikeways. This figure does not include many miles of signed bike routes, such as the 370-mile (592 km) Oregon Coast Bike Route, and many miles of improved shoulders built as part of larger highway projects.
- Of the 530 mile (848 km) total, 270 miles (432 kms) are bikeways built in conjunction with new highway projects. In general, bikeways in rural areas will be shoulders, and in urban areas bike lanes will be provided. Bikepaths are provided where there is a need to guide cyclists through or around highly congested, high-speed traffic.
- *Maintenance.* Although the bikeway program sets aside up to \$100,000 for maintenance, most maintenance of the bikeway network is carried out as part of the routine highway division maintenance and sweeping program.
- *Independent bikeway construction.* Up to 50 percent of the bikeway program budget is spent on bikeways independent of ongoing highway projects. To date, 165 miles of these facilities (usually either widened shoulders or separate paths) have been developed.
- *Assisting local projects.* Ninety-five miles of city and county bikeways have been developed with assistance grants from the State bikeway program. Up to 10 percent of the bikeway program funds are dedicated to this function.
- *The Bicycle Master Plan* has detailed information on the design of bicycle facilities, including bike lane and shoulder widths. It also provides the legislative and regulatory background for the bikeways program.

Oregon also has a Traffic Safety Commission that, since 1987, has been required to provide bicycle safety education and assistance to schools, law enforcement agencies, bicycle education programs, and the general public. The bicycle safety specialist is to come under the auspices of the bikeways program in the future.

The program is funded with a combination of Federal and State funds and offers the following services:

- “Smart Cycling Instructors Course”: Volunteers are trained to teach the “smart cycling” course, or other safety courses, to children.
- School Presentations: The bicycle safety coordinator makes safety presentations to schools throughout the State.
- Equipment Loaner Program: Equipment such as bike helmets, training course aids, and training bicycles are made available to those offering a bicycle skills fair, training course, or other safety event.
- Law Enforcement Support: This program provides law enforcement agencies with data, training videos, education programs, literature, and other resources for law enforcement agencies.
- Educational Brochures and Videos: Free brochures and a lending library of videotapes are made available to groups or individuals.

Besides overseeing the planning and construction of bikeways and the provision of safety and education materials, the Oregon Department of Transportation has developed bicycle maps and touring information. The Oregon Coast Bike Route, for example, is a 370-mile (592-km) signed bike route along the length of the Pacific coast.

The Route is mostly along a shoulder bikeway (which has been widened on the Ocean side of the highway first, to encourage riders to ride in a southerly direction, the direction of the prevailing wind), with some diversions along county and city routes that are quieter, more scenic, and closer to the coast.

A detailed map provides information on the route, and also on the 17 biker/hiker campgrounds that have been developed in campgrounds across the State.

Another unique feature of the Oregon Coast Bike Route is two tunnels that have special lights warning motorists that cyclists are in the tunnel. Cyclists can trigger warning lights when they enter the tunnels.

The Highway Division surveyed users of the Oregon Coast Bike Route in 1990 and found that close to 9,000 ride the route annually, 90 percent coming from out of State. Almost half of the riders take the route from the Washington border to the California State line.

Oregon is also an excellent example for other States to follow in regard to their support for local bicycle and pedestrian programs. It is no coincidence that some of the best cities for bicycling are to be found in Oregon, including Eugene and Portland.

Portland and Eugene, Oregon

One percent of the State highway fund allocations given to cities and counties must be spent on bikeway and walkway projects. In addition, the State provides grant support to city and county bicycle and pedestrian projects. Thus, Portland is guaranteed at least \$100,000 per year for use on bicycle and pedestrian facilities, with the opportunity of getting more from the State highway division for specific projects. Eugene gets close to \$50,000 each year. Cities and counties may save their allocations for up to 10 years if they wish (53).

Portland has a 65-mile (104-km) network of bicycle lanes, paths, and routes based on a detailed local plan and selection process developed by a citizens advisory committee, city staff, and a special task force comprising neighborhood and business associations and the city council (54).

A full-time bikeway program manager has been in position for many years, and a full-time pedestrian coordinator is soon to be added to the Alternative Transportation Program. The program has a mission to "plan and implement bicycle programs and capital improvements necessary to increase bicycle ridership to 5 percent of total work trips by year 2000." (55)

The smaller city of Eugene already enjoys a high level of bicycle use, with 10 percent of journeys to work being made by bike. Based on a 1974 Bikeways Master Plan the city now has more than 80 miles (128 kms) of separate bike paths, lanes, and signed routes. Bicycle use increased by 76 percent between 1971 and 1978 during implementation of this network of facilities.

A detailed description of the facilities and the operation of the bicycle program in Eugene (up until 1982) is available in "Bicycles in Cities: The Eugene Experience. The Development of One Community's Successful Cycling Program." (56) Education, enforcement, and encouragement have played a large part in the success of the overall program.

As with Portland, Eugene has a guaranteed source of funding for bicycle projects, a full-time bicycle coordinator position, and a citizens advisory committee helping direct the program and determine the priorities and policies to be followed.

Seattle, Washington

Seattle has twice been voted the best city for bicycling in North America (57), and has recently produced a video describing the operation of the bicycle program that has made this possible (58). The city has a bicycle and pedestrian program with five full-time staff in the engineering department and both bicycle and pedestrian programs are advised by a citizens' board that meets monthly to review progress and issues related to cycling and walking in the city. Neighboring King County has many of the same institutional elements.

Fundamental to the success of the program has been the development of a 150-mile (240-km) network of trails and on-street bikeways providing people with safe places to ride. The backbone of the network is provided by three trails: the 12-mile (20-km) Burke-Gilman Trail accessing downtown from the north, the Duwamish Trail to the south, and the I-90 trail to the east. The trails are connected with on-street bike lanes, wide-curb lanes and other facilities.

A unique feature of the city program is the highly successful "Bike Spot Improvement Program." Each year the city budgets \$100,000 to fix small-scale problems such as potholes, damaged or missing signposts and lighting columns, identified by cyclists themselves who send in notification forms circulated by the city. The report cards also help identify bicycle parking stand locations, and between 60 and 100 such stands are installed every year. Some of the stands are paid for by private groups, such as the Cascade Bicycle Club.

The Bike Spot program has done a tremendous amount to involve Seattle citizens in the bicycle program, and it helps convince people the city is responsive to their requests, comments, and demands. A similar program has been developed for pedestrian spot improvements.

Seattle is also one of the few United States cities practicing some form of "traffic calming." More than 200 traffic circles have been installed at four-way stop and uncontrolled intersections in residential neighborhoods, at the request of local residents. The circles have reduced traffic and traffic speeds, making the streets safer for pedestrians and cyclists, and also for motorists. The engineering department has produced a video and brochure explaining the operation of this traffic reduction program (59).

Calgary, Alberta

The city of Calgary has a population of over 700,000, and boasts more than 2,000 parks linked by a network of close to 200 kms (125 miles) of pathways and 140 kms (87 miles) of on-street bikeways (60). The pathway system is managed by the Parks and Recreation Department, while the bikeways are developed and maintained by the city's transportation department.

The Parks and Recreation Department has an Outdoor Recreation Coordinator who takes care of pedestrian issues in the network, and who works with a citizens' group to identify and prioritize improvements to the system.

The Calgary Pathway Advisory Council was established in early 1989, at the request of the city council, to provide a mechanism through which the common interests of river valley and pathway users could be addressed to the local government agencies. The council, made up of local citizens, reports directly to the Parks and Recreation Department in the areas of:

- future park policies relating to pathways;
- upgrading, planning, and developing present and future pathways within Calgary;

- reviewing all development proposals which would directly affect the pathway system;
- pathway education and pathway newsletter;
- resolution of pathway user conflicts;
- pathway awareness campaigns;
- preservation and planning of parks and green spaces along Calgary's waterways; and
- providing a volunteer base for working on special projects.

Toronto, Ontario

Toronto's City Cycling Committee (TCCC) is a unique mixture of Government agency and citizen advisory committee, founded in 1975 as an official body of Toronto City Council. Comprised of citizen members, the Committee lobbies all levels of Government to improve the Toronto cycling environment. The aim of the Committee is "to make Toronto the best city for cycling in North America by the year 2000." The Committee meets twice a month (61).

The committee has been involved in implementing numerous promotional events and planning activities, including:

- A safety campaign aimed at bicyclists aged 18 to 34 was developed involving television cartoon public service announcements, bus shelter posters, and posters for bike shops and other locations.
- A range of educational materials including a booklet for adults, *City Cycling Skills*; a *Smart Cycling Video and Instructors Manual* for elementary school teachers; and a series of cycling courses for 9- to 12-year-old children, *Safe Cycling Summer Programs for Kids*.
- Publication of a regular newsletter distributed free to 20,000 readers, and bike maps distributed to 30,000 readers through bike shops and libraries.
- Promotion of a highly successful Bike-to-Work Week program of events that attracts thousands of commuter cyclists each year. The program was seeking an \$80,000 budget for 1991, more than double that of previous years.

- Publication of *Creating a Cycle Efficient Toronto*, (62) a program to increase utilitarian bicycle use in the metropolitan area, and focused on the city's Official Plan for the Central Area.
- 1,000 Bicycle racks have been installed throughout the city since 1983 by the TCCC.

The city of Toronto, in addition to supporting the activities of the TCCC, also employs a full-time bicycle planner, a full-time bicycle coordinator and a Bike-to-Work Week coordinator.

Since the creation of the program in 1975, annual cordon counts in the city show a 270 percent increase in bicycle traffic. Close to 5 percent of vehicles entering central Toronto were bicycles in 1989, and an estimated 10 percent of all trips made by metropolitan residents were by foot or bike. This figure rises to 25 percent of trips in central Toronto during peak hours.

The goal of the TCCC is to shift 15 percent of automobile trips to bicycles (and bike and ride) in the metro area.

Boulder, Colorado

The Boulder Department of Public Works has an Alternative Transportation Center (ATC) charged with the task of achieving a 15 percent shift from single-occupant vehicle trips to alternative modes, including bus, car pool, bike, and walk.

The ATC has been functioning for 4 years, and began by determining an accurate baseline for their ambitious 15 percent cut in single-occupant trips. Overall modal splits for trips in 1990 were (63):

Single-occupant vehicle	43%
Multiple-occupant vehicle	26%
Walking	19%
Bicycling	9%
Bus	2%
Other	2%

Overall modal split defined by miles traveled produced somewhat different results:

Single-occupant vehicle	49%
Multiple-occupant vehicle	37%
Walking	3%
Bicycling	4%
Bus	4%
Other	2%

The ATC includes a pedestrian system plan providing for educational programs and physical improvements to the pedestrian infrastructure. The annual pedestrian conference is an integral part of the overall plan.

The pedestrian system plan identifies facilities that increase the convenience, comfort, and safety of pedestrians, and thus encourages walking as an alternative to driving. Facilities include sidewalks, crossing improvements, pedestrian shelters at transit stops, benches, curb cuts, ramps, signing, and other improvements.

In 1991, the city installed 200 ramps for wheelchair users and pedestrians with strollers, constructed several missing sidewalk links (including a bridge), provided eight bus stop shelters, 20 benches, and a wide range of improvements to existing pedestrian corridors.

The 1991 budget for implementation of the pedestrian system plan included \$35,000 for operations and \$300,000 for capital improvements.

The bicycle system plan has the same emphasis on both capital projects and education and promotion. With an established network of 50 miles (80 kms) of bikeways, the program plans to add 3 new miles including two underpasses and to install 150 parking stands and 40 lockers. The city will continue to promote bike-week activities, to distribute a map of bikeways, and to stimulate media coverage through brochures, advertisements, and editorials.

The 1991 budget for implementation of the bicycle program included \$95,000 for operations and \$520,000 for capital improvements.

The ATC is assisted and advised by a Citizen's Transportation Advisory Committee and has a full-time bicycle and pedestrian coordinator, a bike-week coordinator, and a bicycle education specialist at the University of Colorado.

Other Programs

The programs highlighted in this section are just a few examples of many from around the United States and Canada where bicycle and pedestrian programs are making improvements to the bicycling and walking environment. As the reader learns about these and other programs, certain common and key elements begin to appear in each program. These "key ingredients for success" are dealt with in the next section.

3. Bicycle- and Pedestrian-Friendly Cities: Key Ingredients for Success

When representatives of the bicycle industry, bicycle user groups, trade and consumer magazines, and Government agencies met in 1989 to discuss what it would take to maintain the growth in the popularity of bicycling, a clear train of thought emerged (64).

First, they acknowledged that increasing the level of bicycling—both for transportation and recreation—is a desirable social, economic, and environmental goal, but that this will not happen as long as people feel there are too few safe places to bicycle. More people would bicycle if they felt safer doing so. Exactly the same can be said for walking.

Bicycling takes place primarily on the highway system, or in parks and recreation areas controlled by Government. Government action—or inaction—determines the quality of the bicycle riding environment. Once again, the same can be said for walking.

In almost all the places where bicycling and walking are popular—such as in many of the cities and States described in the previous section—the city or State has an active bicycle and or pedestrian program, usually comprising three key ingredients:

- A full-time program manager.
- Supportive elected officials and professionals within Government agencies.
- An active and organized citizenry, usually exemplified by the presence of a citizens' advisory committee of some kind.

A Full-Time Program Manager

In 1990, a survey was carried out of more than 250 Government agency staff at the Federal, State, and local level who work on bicycle issues (65). More than 120 completed surveys were returned, of whom 34 (29 percent) had the title of “Bicycle Coordinator” or “Bicycle Program Manager.” A further five respondents had full-time positions devoted solely to bicycle issues, but were not actually called bicycle coordinators.

Two-thirds of respondents were located in either the engineering, transportation, or planning department of their Government agency. This is important as the vast majority of bicycling does and will continue to take place on the highway system, shared with other vehicles. Locating a bicycle program manager in the engineering or transportation department provides them with the best access to information and input to the design and implementation of projects directly affecting the quality of the places people ride bicycles.

Eight of the top 10 cities for bicycling in 1990 have bicycle program managers, and of the two that do not, one has only recently ended a full-time position. The city of Seattle has a bicycle and pedestrian program with five full-time positions, and neighboring King County also has a full-time "Roadshare Program" manager. The City and County of San Diego both have full-time positions, and the City of Boulder maintains at least two full-time staff.

The most productive results have come from full-time positions. Some agencies—the majority in the 1990 BFA survey—give a staff person the title or responsibilities of a bicycle program manager but allow them to spend only 10 percent or less of their time on the job. Such an allocation of time makes it difficult to carry out many of the essential functions of a bicycle coordinator.

What Does a Bicycle/Pedestrian Program Manager Do?

A program manager should review all capital improvement projects, traffic plans, development proposals, and comprehensive plans affecting bicycle and walking access and safety.

Most importantly, the manager should develop policies, regulations, and guidelines that institutionalize the development of designs and plans to include bikeways and walkways as a matter of course. As employees learn to implement the policies, regulations, and guidelines, the manager should need to spend less time on the review process.

In the short term, however, a major function of the manager is to ensure that the Government agency in which they work incorporates the nonmotorized modes into all transportation projects and that projects are not approved if they make bicycling or walking more difficult, or impossible.

The program manager should also be able to advise on the planning and design of specific facilities—both as a part of larger highway and site designs, and independent facilities such as special intersection designs. Often, jurisdictions like to have separate bicycle or pedestrian plans, or a nonmotorized element in their planning documents, for which the program manager will be responsible.

The BFA survey of bicycle program specialists revealed other key functions (66). Sixty-five percent of respondents said "coordination" was a major emphasis of their work. "Information flow" was mentioned by 52 percent, and 35 percent included "communication." Bicycle program managers perform a coordinating and technical assistance function within their

agencies, spreading information and advice on bicycle-related issues, both technical and general, to their colleagues.

The survey asked respondents to check the activities on which they had devoted time in the previous 12 months. The most popular answers were policy development (69%), facility design (63%), comprehensive planning (62%), and facility planning (61%). The activity most frequently mentioned by full-time bicycle program managers was dealing with the media and publicity activities. Full-time staff were more likely to be involved in highway project and site/subdivision review.

In general, answers to this question were encouraging, as it would seem that bicycle program specialists are spending the majority of their time on tasks for which they are uniquely qualified, trained, and positioned to undertake—planning, policy development, facility design, and highway project review. They do not spend a lot of time teaching bicycle safety or enforcement activities that, although important, should be the responsibility of other departments or agencies, or even volunteers.

Supportive Elected Officials And Professionals In Government Agencies

One nonmotorized program manager within a large highway department of many hundreds or thousands of employees can quickly get lost. One of the greatest challenges of program staff, therefore, is to generate support for their activities, and to persuade, train, and require their colleagues to work towards the same aim—creating more safe places to ride and walk.

In most cases, highway engineers and planners are not opposed to that idea—but have never been given the encouragement, advice, or technical information on how to accommodate nonmotorized users in the highway system. A survey of bicycle and pedestrian education courses in United States universities in 1990 revealed that only 1 percent of university engineering courses offer a separate course in bicycle and pedestrian transportation (67). While 40 percent of respondents reported they offer some bicycle material within their courses, the average time given was just 1.5 hours.

There are many ways in which the program manager (or other interested individuals and organizations) can start to reverse this process and make engineers and planners more comfortable with the notion of providing for bicycles and pedestrians.

These can include:

- Circulation of interesting magazines, newsletters, articles, or technical papers related to bicycling and walking.

- Writing articles for internal agency magazines or newsletters on the work of the bicycle program or on bicycle and pedestrian planning and engineering in general.
- Informal presentations on different aspects of planning for the nonmotorized at staff meetings or over a bag lunch.
- Organizing in-house training through the personnel department.
- Arranging training courses (from a half to three days in length) to be run by outside organizations.
- Encouraging attendance at major bicycle and pedestrian conferences.

Just as important as the lack of formal training for most engineers and planners is that few of the regulations, guidelines, or policies within which they operate require them to consider the nonmotorized modes. For example, most communities have zoning ordinances requiring a minimum number of automobile parking places in new developments. Very few require a minimum level of bicycle parking, and so no one thinks to include space for bicycle parking.

There are certain key public documents (plans, policies, and standards) that are essential to all levels of Government. By changing these basic documents, a nonmotorized program manager can ensure bicycling and walking are considered at the earliest stages of all planning and development projects.

Highway Design Guides

Most Government agencies involved in highway construction and design have standards, guidelines, or policies to be followed.

Agencies may adopt standards used by others, such as another State, or a national professional association, such as the Institute of Transportation Engineers. Other agencies will develop their own technical documents, and these will be revised on a regular basis. A bicycle/pedestrian program manager should discover which documents are being used, and when they are to be revised. At that time, the manager can provide comments on, and additions to, the documents so they better reflect the needs of the nonmotorized modes.

For example, the American Association of State Highway and Transportation Officials (AASHTO) has a bicycle facilities handbook that has been adopted by many State and local agencies as their standard. Florida (68), New Jersey (69), Minnesota (70), and North Carolina (71) are among the States with their own design guides for bicycle facilities. Florida DOT has just embarked on a series of training workshops based on pedestrian facility designs and considerations that may be turned in to a design manual.

Planning Documents

All units of Government must engage in long- and short-range planning, and it is essential for these documents to incorporate full consideration of bicycling and walking (72). During the 1970s, it was common for States and cities to develop special bicycle master plans, most of which remain gathering dust on Government office shelves.

Although these special bike plans can serve a valuable purpose, particularly in providing direction and focus to a bicycle program, it is usually more important to have nonmotorized programs, policies, and projects integrated into larger community plans. As a stand-alone document, a bike and pedestrian plan can be marginalized or ignored by the rest of a Government agency.

Other Ordinances and Regulations

Program managers need to know when State Implementation Plans, Growth Management Plans, Street Maintenance Schedules, zoning ordinances and a host of other documents are being developed, so they can include bicyclist and pedestrian needs.

Building the Support of Elected Officials

Ensuring the program has frequent, small, visible successes and products—such as parking stands, pothole repairs, signal and sign repair, ramps, benches, crosswalks, lighting improvements, maps, safety brochures, and publications—helps maintain a high profile, both within the agency and externally. In turn, this enables elected officials to show progress and to feel good about the program.

With these small successes support can be garnered for more ambitious projects, such as including space for bicyclists in a bridge replacement project or highway improvement, and in the ongoing process of obtaining funding.

Active Citizens and A Citizens Advisory Committee

The third key ingredient necessary to make a city or State bicycle- or pedestrian-friendly is an active local community, a more general tradition of neighborhood activism, and citizen involvement in Government.

The bicycle community has developed a valuable structure for encouraging participation in Government through Bicycle Advisory Committees (BAC) or Task Forces. The 1990 survey of bicycle program specialists revealed that more than half the respondents had some kind of relationship with a Bicycle Advisory Committee, and almost all the best cities for bicycling have such bodies (73).

The same cannot be said of pedestrian groups. There is very little experience or tradition of pedestrian activists working with local governments, and little evidence of the pedestrian cause having been championed by anyone other than the bicycle community.

This is slowly changing. Within the last 3 years pedestrian advocacy groups have formed in Boston, Massachusetts; Portland, Oregon; Philadelphia, Pennsylvania; Asheville, North Carolina; Madison, Wisconsin; New York, New York; and Toronto and Ottawa in Canada. While these groups have small membership levels, the *Prevention Magazine* walking club, a recreational association, has more than 70,000 members.

Some success is already being achieved: Portland has hired a new Pedestrian Coordinator in the city's Alternate Transportation Program and the North Carolina Department of Transportation is also hiring a pedestrian coordinator. Many of the community bicycle coordinators in Florida are also pedestrian coordinators, and the East Central Florida Regional Planning Commission (Orlando metropolitan area) is advertising for a full-time pedestrian program staff position (74).

The groups in Boston, Philadelphia, and Portland have all also developed citizen councils on pedestrian issues that meet regularly with city officials, and the city of Seattle has a formal Pedestrian Advisory Committee that met twice in 1992.

Advisory committees are traditionally made up of volunteers. They provide input into the Government process, work on bicycle- and pedestrian-related issues within the community, activate other volunteers, and provide some vision and direction to the work of the program. (Advisory committees may be structured so as to include mostly Government agency personnel meeting to coordinate the efforts of different Government agencies.)

Some common activities of an Advisory Committee (that typically comprises six to 10 members, meeting on a monthly basis) include:

- Reviewing and commenting on planning documents and policies.
- Developing policies and guidelines on nonmotorized transportation issues.
- Implementing community-based activities such as education programs, maps, publications, and bicycle events.
- Identifying the needs and concerns of bicyclists and pedestrians, and the opportunities for bicycling and walking in the community.
- Recommending and implementing programs involving the private and nonprofit sectors—such as bike to work promotions.

- Reviewing the annual workplan of the nonmotorized program and developing their own list of priority projects.

The involvement of citizens through an advisory committee has distinct benefits. First, the decisions and actions of the committee are more likely to reflect a balance between the enthusiasm and ideals of citizen members and the realism and attention to practical details of Government employees.

Second, working together educates all involved as to the views and constraints under which each must operate. Citizens, in particular, are better able to understand how Government works as a result.

Third, the committee may be able to ask for, and say, things that Government employees cannot. The committee also provides an official and valuable channel for citizen comment and requests.

Fourth, an advisory committee can provide continuity and permanence in the face of personnel changes. For example, in Eugene, Oregon:

“The presence of a regular committee with a body of wisdom shared by the continuing members provides a buffer against these losses [of staff]. The program need not die and have to be restarted, and replacements are more quickly trained. Under the guidance of the committee three bicycle coordinators [in 10 years] gained their stripes and two traffic engineers learned to think bicycles.” (75)

The value of citizen involvement is certainly not confined to advisory committees. Indeed, these advisory committees are often the result of citizen pressure for Government action on bicycle and pedestrian issues. The highly successful Florida bicycle program was created in 1979 after citizens persuaded Governor Graham to form a Task Force, which in turn recommended the appointment of a full-time bicycle coordinator.

In Seattle, the bicycle community helped to secure passage of a \$33 million bond issue for open space preservation and trail development that will finance parts of the growing bike network in the city and neighboring King County.

4. Conclusions

There are three clearly identifiable and common ingredients that make up a successful bicycle and pedestrian program.

- A full-time program manager.
- Supportive elected officials and professionals in Government agencies.
- An active and organized citizenry, usually exemplified by the presence of a citizens advisory committee.

In States and cities with active and successful programs real progress is being made towards the creation of communities in which large segments of the population will feel comfortable, willing, and able to walk and ride bicycles for both transportation and recreation.

The existence of all three elements simultaneously is not necessary for success, and it is not possible to say which is the most important element. Palo Alto, for example, has not had an official bicycle program manager, but has done more than most communities to improve conditions for bicyclists. The city does have good citizen involvement and a responsive Government.

Similarly, Montreal does not have a formal Bicycle Advisory Committee, but does have active citizen groups, a program manager and some supportive elected officials.

It is equally true, however, that even with some or all of the key ingredients for success in place, communities may not experience the same degree of success as places such as Madison, Wisconsin, and Boulder, Colorado. The three ingredients are not absolute guarantees of success.

In all of the places best known for being bicycle- and pedestrian-friendly, and those with one or more of the key ingredients, there remains much to be done to fully integrate bicycling and walking into the transportation system.

There are no hard and fast rules about how to implement or create a successful program containing these key ingredients. Bicycle program manager positions have most often been created by transportation departments without the need for specific legislation or mandate. However, many positions so created are part-time and less likely to generate substantial change.

Most of the full-time and more successful positions have been created by legislation or executive order of a Governor or Mayor.

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) requires each State to appoint a bicycle and pedestrian coordinator (section 1033 (d))—but no such mandate is possible to make whole Government agencies more receptive to bicycling and walking.

Highway and transportation agencies are continually having to deal with new issues and new pressures, ranging from fresh environmental mandates to telecommuting, transportation demand management programs, and intelligent vehicle-highway systems. The way in which bicycle and (to a lesser extent) pedestrian programs have been able to develop and become institutionalized within agencies provides useful guidance and experience for these upcoming issues.

Indeed, the experience of the bicycle community is an excellent example for pedestrian groups, as many of the problems faced by bicyclists and pedestrians are the same—institutional neglect, lack of promotion, funding, and safe places to walk.

The institutional means to overcome these problems may also be similar. In a few short years most transportation agencies may have both a bicycle and pedestrian program manager working with citizen advisory groups to make United States communities more bicycle- and pedestrian-friendly.

This will not necessarily result in the same solutions on the ground for pedestrians and bicyclists—as it is not appropriate for bicyclists to be directed to use sidewalks, for example—but will provide a framework by which both modes can be adequately represented and accommodated by State and local transportation agencies.

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Lincoln-Lancaster: Michael Brienzo, 555 S. Tenth St., Lincoln, NE 68508

New York

The DOT has appointed regional coordinators in each district office.

New York City: John Benfatti, Bicycle Coordinator, NYC DOT,
40 Worth St., #1035, New York, NY 10013.

Karen Votava, NY Department of City Planning, 22 Reade
St., New York City, NY 10007

Glynnis Berry, Pedestrian Coordinator, 40 Worth St.,
New York, NY 10013

Ohio

Cincinnati: Ann Gordon, Transportation Planner, Ohio-Kent-Ind
Regional Council of Governments, 801-B West 8th St.,
#400, Cincinnati, OH 45203

Oregon

Eugene: Diane Bishop, Bicycle Coordinator, City of Eugene,
858 Pearl St., Eugene, OR 97401

Portland: Krys Ochia, Bicycle Program Manager, Portland DOT,
1120 SW Fifth St., #810, Portland, OR 97204.

Portland Bill Hoffman, Pedestrian Program Manager, Portland DOT,
1120 SW Fifth St., #806, Portland, OR 97204

The Oregon DOT also has a list of bicycle contacts in 20 cities and 12 counties throughout the State.

Texas

The State DH&PT has appointed regional coordinators in all 24 district offices.

Dallas: P.M. Summers, Bicycle Coordinator, City of Dallas,
City Hall 5-BS, Dallas, TX 75201

Utah

Salt Lake City: Julie Eldridge, Alternative Transportation Coordinator,
Salt Lake City DOT, 333 South 200 East #201, Salt Lake
City, UT 84111

Virginia:

Arlington County Ritch Viola, Bicycle Coordinator, Dept. of Public Works,
2100 Clarendon Blvd. #717, Arlington, VA 22203

Chesterfield County Emily Kimball, Recreation Coordinator, Chesterfield Parks
& Recreation., P.O. Box 40, Chesterfield, VA 23832

Washington

King County: Phil Miller, Roadshare Coordinator, Department of Public
Works, 976 King County Admin. Bldg., 500 4th Ave.,
Seattle, Washington 98104

Seattle: Peter Lagerwey, Bicycle and Pedestrian Program
Coordinator, Seattle Engineering Dept., Municipal Bldg.,
6th Floor, Seattle, WA 98104. Program also has a Bicycle
Program Planner and a Pedestrian Program Engineer.

Wisconsin

Madison: Arthur Ross, Bicycle and Pedestrian Coordinator,
Madison DOT, Madison Municipal Bldg, Room 100,
Madison, WI 53710

Wyoming:

Cheyenne-Laramie County: Cindy Schneider, Bicycle Coordinator, County Planning
Office, 2101 O'Neil Ave., Cheyenne, WY 82001

CANADA

British Columbia

No provincial coordinator.

Alberta

Calgary: Jeff Grutzz, Outdoor Recreation Coordinator, Calgary Parks and Recreation, P.O. Box 2100, Station M, Calgary, Alberta T2P 2M5

Calgary: Jeff Blair, Transportation Technician, City of Calgary Transportation Department

Edmonton: Peter Hepplestone, Director, Facility Planning, City of Edmonton DOT, 10th Floor, Century Place, 9803-102A Ave., Edmonton, Alberta

Saskatchewan

No provincial coordinator

Manitoba

No provincial coordinator

Ontario

Provincial Coordinator: David Hunt, Project Coordinator, Municipal Transportation Policy Office, 1201 Wilson Ave., 3rd Floor, West Tower, Downsview, Ontario M3M 1J8

Hamilton-Wentworth: John van der Mark, Project office, 25 Main St. West, 10th Floor, Hamilton, Ontario L8P 1H1

Ottawa: Bicycle Education and Safety Coordinator, Ottawa-Carlton Safety Council, 208-190 Somerset St., West, Ottawa, Ontario K2P 0J4

Toronto: Barbara Wentworth, Bicycle Coordinator, City of Toronto Planning Dept., 8th East, City Hall, Toronto, Ontario, M5H 2N2.

Dan Egan, Bicycle Planner.

Sue Zielinski, Bike-to-Work Week Coordinator.

Quebec

Provincial Coordinator: Phillippe Poulin, Coordonnateur-Velo, Ministere des Transports, 700, boulevard St-Cyrille Est, 30th etage, Quebec, Quebec G1R 5H1

Montreal: Gilles Morel and Robert Desjardins (514)872-1465

Newfoundland No provincial coordinator

New Brunswick No provincial coordinator

Nova Scotia No provincial coordinator

Prince Edward Island No provincial coordinator

University Bicycle Programs

Arizona:

ASU, William Wright, Public Safety Dept., 628 E. Apache, Tempe, AZ 85281.
(602)965-6068

California:

UC Davis, David Takemoto Weerts, Fire and Police Bldg, Kleiber Hall Dr., Davis, CA 95616. (916)752-8943

UCLA, Kathleen Griessel, Ridesharing Assistnace Program, 405 Higard Ave., Los Angeles, CA 90024. (213)825-7639

UC San Diego, Lisa Dougan, MAAC 322-Q-040, La Jolla, CA 92093. (619)534-4235

Colorado:

Univ. of Colorado, Ana Johnson, Bicycle Program Coordinator, 1511 University Ave., Boudler, CO 80709-0002. (303)492-0449

Conn.:

Univ. of Conn. Police Dept., Lauren Sipperly, 1501 Storrs Rd., Storrs, CT 06269-4070.
(203)486-4994

Delaware:

Ron Jester, Safety Specialist, Univ of Del. Cooperative Extension Service, Georgetown, DE 19947. (302)856-7303

Florida:

Univ. of Florida, Linda Crider, 431 ARCH, Urban Regional Planning Dept., Univ. of Florida, Gainesville, FL 32611.

Michigan:

Michigan State Univ., Lowell Rothert, 6H Berkey Hall, East Lansing, MI 48824-1111.
(517)355-0138

Minnesota:

University of Minnesota, Bicycle Program, Coffey Hall #340, 1420 Eckles Ave., St. Paul MN
55108. (612)625-5737

New Hampshire:

Univ. of N.H. Cooperative Extension, 4-H Office, Sally Barney, Moiles House, Durham, NH
03824. (603)862-2180.

New York:

Cornell Univ., Lois Chaplin, 328 Riley Robb Hall, Ithaca, NY 14853. (607)255-2498

Texas:

Univ. of Texas, Tyler COPP Project, Lotus Circilo, 3900 Univ. Blvd., Tyler, Texas, 75701.
(214)648-5519

John Morehead, Integrated College Traffic Safety Program, Texas Tech., P.O. Box 4070,
Lubbock, TX 79406. (806)742-2369

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